

Application Serial No. 10/823,322
Amendment dated July 12, 2006
Reply to Office Action dated May 9, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A muffler for a small internal combustion engine, comprising:
~~a housing having an inlet and an outlet;~~
~~an exhaust flow path defined within said housing, said exhaust flow path including first and second passages and at least one expansion volume, said exhaust flow path and dimensioned to provide an exhaust tuning effect to exhaust gasses which pass through said muffler, said exhaust flow path comprising, in succession:~~
~~a first expansion volume in fluid communication with said inlet;~~
~~a first passage in fluid communication with said first expansion volume;~~
~~a second expansion volume in fluid communication with said first passage;~~
and
~~a second passage in fluid communication with said second expansion volume and with said outlet.~~
2. (currently amended): The muffler of Claim 1, wherein ~~said exhaust flow path is first and second passages are each curved through an angle of at least 270°~~.
3. (currently amended): The muffler of Claim 1, wherein said first and second passages are each curved through an angle of at least 180°.
4. (original): The muffler of Claim 1, wherein said first and second passages each have a substantially constant cross-sectional area.
5. (canceled)

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6. (original): The muffler of Claim 1, wherein said housing further comprises:

a first layer in which a substantial portion of said second passage is disposed, said first layer disposed proximate said inlet; and

a second layer in which a substantial portion of said first passage is disposed, said second layer connected to said first layer and disposed distally from said inlet.

7. (currently amended): The muffler of Claim 1, further comprising a tailpipe tail pipe in fluid communication with said second passage and with said outlet.

8. (currently amended): The muffler of Claim 1, further comprising at least one resonance chamber in fluid communication with said exhaust flow path.

9. (currently amended): A muffler for a small internal combustion engine, comprising:

a housing having an inlet and an outlet;

an exhaust flow path defined within said housing, said exhaust flow path dimensioned to provide an exhaust tuning effect to exhaust gasses passing through said muffler, said exhaust flow path comprising:

first and second passages, each of said first and second passages being curved through an angle of at least 180°; and

at least one expansion volume in fluid communication with said first and second passages; and

at least one resonance chamber in fluid communication with said exhaust flow path.

10. (original): The muffler of Claim 9, wherein said housing further comprises:

a first layer in which a substantial portion of said second passage is disposed, said first layer disposed proximate said inlet; and

a second layer in which a substantial portion of said first passage is disposed, said second layer connected to said first layer and disposed distally from said inlet.

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11. (currently amended): The muffler of Claim 9, wherein said exhaust flow path comprises, in succession:

a first said expansion volume in fluid communication with said inlet;
said first passage in fluid communication with said first expansion volume;
a second expansion volume in fluid communication with said first passage; and
said second passage in fluid communication with said second expansion volume
and with said outlet.

12. (currently amended): The muffler of Claim 9, further comprising a tailpipe tail
pipe in fluid communication with said second passage and with said outlet.

13. (original): The muffler of Claim 9, wherein each of said first and second passages has a substantially constant cross sectional area.

14. (currently amended): The muffler of Claim 9, further comprises comprising at least one two of said resonance chamber chambers in fluid communication with said exhaust flow path.

15. (currently amended): In combination:

a small, single cylinder internal combustion engine having an exhaust port; and
a muffler attached to said exhaust port of said engine, said muffler comprising:
a muffler housing;
an exhaust flow path defined within said muffler housing, including an inlet in fluid communication with said exhaust port and an outlet in fluid communication with the atmosphere, said exhaust flow path dimensioned to provide a tuning effect to exhaust gases produced by said engine, said exhaust flow path comprising:

a first passage in fluid communication with said inlet and disposed substantially within a portion of said muffler housing which is disposed distally from said engine;
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a second passage in fluid communication with said first passage
and with said outlet and disposed substantially within a portion of said muffler housing which is
disposed proximal to said engine.

16. (currently amended): The combination of Claim 15, wherein said ~~exhaust flow~~
~~path is first and second passages are each~~ curved through an angle of at least 270°.

17. (currently amended): The combination of Claim 15, wherein said exhaust flow path ~~comprises further includes~~ a first expansion volume[[, a]] ~~disposed intermediate said inlet and said~~ first passage, ~~and~~ a second expansion volume[[, and a]] ~~disposed intermediate said first passage and said~~ second passage.

18. (original): The combination of Claim 17, wherein each of the first and second passages are curved through an angle of at least 180°.

19. (original): The combination of Claim 17, wherein each of said first and second passages has a substantially constant cross sectional area.

20. (currently amended): The combination of Claim 17, wherein said muffler ~~further~~
housing comprises:

a first shell in which a substantial portion of said second passage is disposed, said first shell disposed proximate said engine; and

a second shell in which a substantial portion of said first passage is disposed, said second shell connected to said first shell and disposed distally from said engine.

21. (currently amended): The combination of Claim 17, wherein said muffler further comprises a ~~tailpipe tail pipe~~ in fluid communication with said second passage and with said outlet.

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22. (currently amended): The combination of Claim 15, wherein said muffler further comprises at least one resonance chamber ~~therein~~ in fluid communication with said exhaust flow path.

23. (currently amended): A muffler for use with a small internal combustion engine, said muffler comprising:

a first shell including an exhaust inlet and containing a ~~first~~ portion of an exhaust passage, said ~~first~~ portion of said exhaust passage curved through an angle of at least 180°;

a second shell including an exhaust outlet and containing a ~~second~~ another portion of said exhaust passage, said ~~second~~ another portion of said exhaust passage curved through an angle of at least 180°; and

a partition element disposed between said first and second shells, said partition element substantially separating said ~~first and second~~ portions of said exhaust passages; and

a pipe extending from said first shell through said partition element and said second shell to said outlet, wherein exhaust flows into said muffler through said inlet, through said portion in said second shell and then through said portion in said first shell before exiting said muffler through said outlet.

24. (currently amended): The muffler of Claim 24, wherein said ~~first and second~~ portions of said exhaust passage each have a substantially constant cross-sectional area.

25. (currently amended): The muffler of Claim 24, further comprising an expansion volume disposed between said ~~first and second~~ portions of said exhaust passage.

26. (new): The muffler of Claim 9, wherein said first and second passages are each curved through an angle of at least 270°.